No. 7200081

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Texas Planting Seed Association

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF seventeen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COTTON

'TPSA 1633'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* eighth *day of* August *in the year of our Lord one thousand nine hundred and* seventy-five

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Earl L Butz

Secretary of Agriculture

FORM GR-470
(2-12-71)

UNITED STATES DEPARTMENT OF AGRICULTURE
CONSUMER AND MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

FORM APPROVED
OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1. VARIETY NAME OR TEMPORARY DESIGNATION	2. KIND NAME	FOR OFFICIAL USE ONLY
TPSA 1633	Cotton	PVPO NUMBER 72081
3. GENUS AND SPECIES NAME	4. FAMILY NAME *(Botanical)*	FILING DATE 11/28/72 / TIME 1:30 P.M.
Gossypium hirsutum	Malvaceae	FEE RECEIVED $750 / CHARGES
	5. DATE OF DETERMINATION 1969	

6. NAME OF APPLICANT(S)	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*	8. TELEPHONE AREA CODE AND NUMBER
Texas Planting Seed Association	P. O. Box 713 Bryan, Texas 77801	713/823-8053

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*	10. STATE OF INCORPORATION	11. DATE OF INCORPORATION
Cooperative	Texas	1943

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

E. F. McFarland, Breeder and General Manager
P. O. Box 713
Bryan, Texas 77801

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 12A. Exhibit A Origin and Breeding History of the Variety *(See Section 52, P.L. 91-577)*
- [X] 12B. Exhibit B, Botanical Description of the Variety
- [X] 12C. Exhibit C, Objective Description of the Variety
- [X] 12D. Exhibit D, Data Indicative of Novelty
- [X] 12E. Exhibit E, Statement of the Basis of Applicant's Ownership

The applicant declares that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable. *(See Section 52, P.L. 91-577).*

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? *(See Section 83(a), P.L. 91-577) (If "Yes," answer 14B and 14C below.)* [X] YES [ ] NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations? [X] YES [ ] NO

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? Registered and 1 year of Certification

Applicant is informed that false representation herein can jeopardize protection and result in penalties.

The undersigned applicant(s) of this sexually-reproduced novel plant variety believes that the variety is distinct, uniform, and stable as required in Section 41 and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act (P.L. 91-577).

January 25, 1972
(DATE)

E. F. McFarland Breeder
(SIGNATURE OF APPLICANT)

1

(DATE)

(SIGNATURE OF APPLICANT)

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EXHIBIT A

1. TPSA 1633 originated in 1964 by individual plant selection from Breeding Line 62-0-10, which line was later entered in 1967 in the Texas Certified Seed program as TPSA 110 variety. TPSA 110 was entered in the Certified program under a closed pedigree.
2. Following the individual plant selection the new line (65-PR-1633) was placed in progeny row in 1965 and was reselected. In 1966 a small increase was planted. Starting in 1967 the new line (65-PR-1633) was placed in the Texas Planting Seed Association testing program where it has been compared with commercial varieties Stoneville 7A, Stoneville 213, Deltapine 16 and Lankart 57.
3. Variants within the population of (65-PR-1633) TPSA 1633 appear to be very rare.
4. Enclosed photograph indicates the stability of plant type and the ability of the population to mature uniformly.

EXHIBIT B

1. Seed of TPSA 1633 are intermediate in size between Stoneville 7A and Lankart 57. Seedling vigor is extremely high and the hypocotyl extends very rapidly allowing early cultivation. Flowering of TPSA 1633 will begin from 2 to 3 weeks prior to fruiting of Stoneville 7A and Lankart 57 planted at the same time under like conditions. The fruiting period of TPSA 1633 is much more compact than that of Stoneville 7A. TPSA 1633 is semi-determinant and maturity comes on rapidly. One of the most important characteristics of TPSA 1633 is that as the bolls become mature the plants will self-defoliate.
2. The stature of the TPSA 1633 is somewhat shorter than that of Stoneville 7A grown under similar conditions. At all stages of growth and maturity the plant type is open allowing penetration of sunlight into the inner parts of the stalk at all times. During the growing period it is possible to visually observe from above all the fruit on the plant. Unlike the Delta-type varieties, the foliage of TPSA 1633 is extremely light and open. This plant has the normal upland leaf type. At time of maturity the bolls start maturing and opening, the plant will start defoliating itself naturally as the plant matures from bottom to the top.

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Continuation of EXHIBIT B

Refer to enclosed photograph which indicates TPSA 1633 on the left has matured its bolls and self-defoliated, while the variety TPSA 110 on the right is still maturing and holding its leaves. These varieties were cultivated exactly alike at all stages and nothing was done to or for either variety that was not done to or for the other. It is obvious that the TPSA 1633 has matured well ahead of the TPSA 110 (estimated to be at least 7 days earlier) and that the TPSA 1633 has shed its leaves without benefit of a defoliant. Estimated earliness of TPSA 1633 compared with Stoneville 7A is from 2 to 3 weeks at maturity.

Boll type of TPSA 1633 is semi-storm resistant. This boll type will take a great deal more weathering than will the Delta-types at the same stage of maturity. Cotton in the TPSA 1633 will not string and fall out because of the rain and wind, where the Delta-types will string and fall to the ground badly under the same type conditions in South Texas. The boll type of TPSA 1633 lends itself to both spindle and stripper harvesting.

The extreme earliness of TPSA 1633 is extremely important in the southern part of Texas. Earliness allows the plant to set some crop before root rot kills the plant. Earliness allows a good fruit set before high populations of bollworm and tobacco budworm become unmanageable. Earliness allows the crop to be matured and harvested before the start of the late August rainy period.

EXHIBIT D

1. Extreme earliness - 7 days earlier than TPSA 110, and 14 to 21 days earlier than Stoneville 7A.
2. Open plant type allowing sunlight and air penetration during the entire life of the plant to help cut down on diseases of plant and bolls.
3. Self-defoliation at end of maturation of bolls. (SEE ENCLOSED PICTURE)
4. Semi-storm resistant boll type allowing excellent harvestability with either spindel harvester or stripper harvester.
5. Adaptability to either irrigated conditions or dryland conditions.
6. Yield range within the same range as the best adapted varieties under either irrigated or dryland conditions.

In computer

Sept 24

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-8 (10-2-72)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C (Cotton)

OBJECTIVE DESCRIPTION OF VARIETY

INSTRUCTIONS: *See Reverse.*

COTTON *(GOSSYPIUM SPP.)*

NAME OF APPLICANT(S)

TEXAS PLANTING SEED ASSOCIATION

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*

P. O. Box 713
Bryan, Texas 77801

FOR OFFICIAL USE ONLY

PVPO NUMBER
72081

VARIETY NAME OR TEMPORARY DESIGNATION

TPSA 1633

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. SPECIES:

[1] 1 = GOSSYPIUM HIRSUTUM 2 = GOSSYPIUM BARBADENSE

2. AREA(S) OF ADAPTION (0 = Not Tested, 1 = Not Adapted, 2 = Adapted):

[ ] EASTERN [ ] DELTA [2] CENTRAL [ ] HIGH PLAINS [ ] EL PASO AREA
[ ] WESTERN LOW HOT VALLEYS [ ] SAN JOAQUIN [ ] OTHER *(Specify)* Central, Coastal and South Texas

3. MATURITY (50% Open Boll):

[1][5] NO. OF DAYS *EARLIER* THAN . . . . . [2]
[ ][ ] NO. OF DAYS *LATER* THAN . . . . . [ ]

1 = COKER 310 2 = DELTAPINE 16 3 = STONEVILLE 213
4 = PAYMASTER 111 5 = ACALA 1517-70 6 = ACALA SJ-1
7 = LANKART 57 8 = OTHER *(Specify)* _____

4. PLANT HABIT:

[2] 1 = SPREADING 2 = INTERMEDIATE 3 = COMPACT

[1] 1 = FOLIAGE SPARSE 2 = DENSE 3 = OTHER *(Specify)* _____

5. PLANT HEIGHT:

[3][0] CM. *SHORTER* THAN . . . . . [2]
[2][0] CM. *TALLER* THAN . . . . . [7]

1 = COKER 310 2 = DELTAPINE 16 3 = STONEVILLE 213
4 = PAYMASTER 111 5 = ACALA 1517-70 6 = ACALA SJ-1
7 = LANKART 57 8 = OTHER *(Specify)* _____

6. MAIN STEM:

[3] 1 = LAX 2 = ASCENDING 3 = ERECT

[8] CM. TO FIRST FRUITING BRANCH

[ ][6] NO. OF NODES TO FIRST FRUITING BRANCH *(from cotyledonary node)*

7. LEAF:

[1][5] CM. WIDTH OF WIDEST LEAVES AT MATURITY

8. LEAF PUBESCENSE:

[3] 1 = GLABROUS (HAIRS AS SPARSE AS D_2 SMOOTH)
2 = SMOOTH LEAF (DELTAPINE SMOOTH LEAF) 3 = PUBESCENT (STONEVILLE 213)
4 = HEAVY PUBESCENCE (H_1 OR H_2) 5 = OTHER *(Specify)* _____

9. LEAF COLOR:

[2] 1 = VIRESCENT YELLOW 2 = LIGHT GREEN 3 = DARK GREEN *(Acala-442)* 4 = RED
5 = OTHER *(Specify)* _____

10. LEAF TYPE:

[1] 1 = NORMAL 2 = OKRA 3 = SUPER OKRA 4 = OTHER *(Specify)* _____

11. FLOWER:

[2] 1 = NECTARILESS 2 = NECTARIED

[1] Petals: 1 = CREAM 2 = YELLOW [1] Pollen: 1 = CREAM 2 = YELLOW

12. FRUITING BRANCH TYPE:

[3] 1 = CLUSTER 2 = SHORT 3 = NORMAL [2] 1 = DETERMINATE 2 = INDETERMINATE

13. GOSSYPOL CONDITION:

[3] 1 = GLANDLESS 2 = REDUCED GLANDS 3 = NORMAL GLANDS
4 = OTHER *(Specify)* _____

[1] 1 = NORMAL BUD GOSSYPOL 2 = HIGH BUD GOSSYPOL

14. SEEDS: 100 seeds = 10.6 gms

[ ][ ][ ] ± [ ][ ] SEED INDEX *(Fuzzy seed basis)*

[2] Seed Fuzz: 1 = SPARSE (GREGG 35) 2 = MODERATE (DPL-16) 3 = HEAVY (ACALA SJ-1) 4 = OTHER *(Specify)* _____

4

Continuation of EXHIBIT D

7. Fiber characteristics, depending on the availability of moisture at time of development of fiber, range from 1" under sparse moisture to 1 3/32" under adequate moiture. Strength falls consistently within the range of 85,000 to 100,000 pounds per square inch. Micronaire falls within the premium range (3.5 to 4.9) a high percentage of the time under normal developmental conditions.

EXHIBIT E

Application is being made in the name of Texas Planting Seed Association. Direction of the breeding research was done by E. F. McFarland, Breeder and General Manager of the Texas Planting Seed Association.

TEXAS PLANTING SEED ASSOCIATION

POST OFFICE BOX 713 — TELEPHONE 713/823-8053

BRYAN, TEXAS 77801

Branch Office:
WESLACO, TEXAS 78596
512/968-5486

March 4, 1974

Mr. J. J. Higgins, Examiner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service
6525 Belcrest Road
Hyattsville, Maryland 20782

Application No. 72081
"STATEMENT OF NOVELTY"

Dear Mr. Higgins:

I have been trying to accumulate Variety Test data on TPSA 1633 compared with other commercial varieties and have had only limited success. Enclosed are charts which summarize test results where the TPSA 1633 was tested under the same environmental conditions as TPSA 110 and various other commercial varieties. Chart No. II enclosed summarizes TPSA 1633 and TPSA 110 test results at five locations over a period of 2 years. Chart No. I summarizes TPSA 1633 test data compared with three other commercial varieties over a period of 2 years.

Analysis of Chart No. II reveals the following about TPSA 1633 compared with TPSA 110, the variety TPSA 1633 most closely resembles:

A. Yields are not different significantly
B. Length of TPSA 1633 shows slight improvement (.02 inch) over TPSA 110
C. Micronaire of the two varieties are not significantly different
D. Strength (MPSI) indicate to be the same on both varieties
E. Grade of TPSA 1633 shows one full grade above TPSA 110 - a significant economic improvement
F. Picture (Supplement to Chart No. II) indicates the following characteristics of TPSA 1633 that are of economic importance compared with TPSA 110:

    1. Improvement in earliness of approximately 7 days
    2. More open plant type
    3. Self-defoliation of TPSA 1633 at maturity contributes to better grade of harvested cotton (See E above)

Analysis of Chart No. I reveals the following about TPSA 1633 compared with three commercial varieties, Deltapine 16, Lankart 611 and Lankart 571:

A. Probability of no significant difference in yield among 4 varieties
B. TPSA 1633 on dry land tests (all tests reported are dryland) length shows .05 improvement over Lankart 611, a dry land variety
C. TPSA 1633 micronaire indicates to be in Premium range on the average while Deltapine 16 and Lankart 571 are in Discount range
D. TPSA 1633 indicates Strength (PSI) from 7% higher (6,000) to 14% higher (11,000) than other commercial varieties. Highest MPSI for

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D. (Continuation) TPSA 1633 was 100 MPSI ('72 Denton) while the highest for any other commercial variety was 93. Average MPSI for TPSA 1633 is 89 compared with average MPSI for other commercial varieties is 81 (11% increase)

E. Average grade for TPSA 1633 is 33 while average grade for other varieties is 38, or approximately 1/2 grade improvement in favor of TPSA 1633, a significant economic improvement

F. Storm Resistant rating ('72 Denton) for TPSA 1633 is 1.0 along with a 1.0 for stripper varieties Lankart 611 and Lankart 571 while Deltapine 16 rated 3.0, typical for open boll varieties. TPSA 1633 is considered EITHER a spindle harvest OR stripper harvest variety.

IN SUMMARY: (Characteristics of Economic Significance)

A. TPSA 1633 indicates a better grade from 1/2 to 1 full grade over other commercial varieties

B. Self-defoliation of TPSA 1633 at maturity contributes significantly to cost of harvest as well as improvement of grade (see A above)

C. TPSA 1633 shows strength of fiber higher by 7% (6,000 PSI) to 14% (11,000 PSI) than most non-Acala type commercial varieties.

D. Micronaire range is more consistently in premium range than other commercial varieties compared.

E. Length improvement over dry land (stripper variety Lankart 611) type of .05 inch.

F. TPSA 1633 is classified as EITHER a spindle harvest OR stripper harvest variety.

Items A through F combined into one variety indicates a uniqueness that is not found in other commercial varieties. We feel that these unique measurements combined with other characteristics that are equal to other commercial varieties gives TPSA 1633 the novelty necessary for it to qualify under the Plant Variety Protection Plan.

The Texas Planting Seed Association is owner of TPSA 1633. TPSA 1633 was developed under the direction of E. F. McFarland, Breeder and General Manager of the Texas Planting Seed Association.

A Check in the amount of $250 is enclosed to prepare the TPSA 1633 for Certification under Plant Variety Protection.

Sincerely,

E. F. McFarland

E. F. McFarland
Breeder

Enclosures

Chart No. I. Eight test comparisons made during 1972 and 1973 production seasons. Varieties were commercial varieties compared with TPSA 1633 for Yield, Length (2.5% SL), Micronaire, Strength (MPSI) and Grade. Data compiled under Project 668, TAES & USDA.

Year & Location		TPSA 1633	Deltapine 16	Lankart 611	Lankart 571
'72 Hoelscher-Nueces Co.	Yield	618	630	578	540
	2.5% SL	1.01	1.06	.95	1.02
	Mike	5.3	5.4	4.9	5.4
	MPSI	87	76	74	80
	Grade	M (31)	SLM+ (40)	SLM+ (40)	M (31)
'72 Marburger-San Pat.	Yield	576	738	679	624
	2.5% SL	1.11	1.10	.99	1.08
	Mike	4.4	4.5	4.3	4.6
	MPSI	89	77	74	75
	Grade	M (31)	SLM+ (40)	SLM+ (40)	SLM+ (40)
'72 Corpus Christi	Yield	264	310	306	284
	2.5% SL	1.04	1.03	1.04	1.00
	Mike	5.3	5.3	4.9	5.0
	MPSI	88	88	86	89
	Grade	M (31)	M (31)	SLM+ (40)	SLM+ (40)
'72 Denton	Yield	416	484	340	371
	2.5% SL	.95	.99	.91	.94
	Mike	5.3	5.5	5.2	5.8
	MPSI	100	89	88	90
	Grade	M (31)	M (31)	M (31)	M (31)
	* SR	1.0	3.0	1.0	1.0
'73 Hoelscher-Nueces Co.	Yield	444	373	490	442
	2.5% SL	1.05	1.05	1.01	1.02
	Mike	4.5	5.1	4.7	5.2
	MPSI	84	80	79	82
	Grade	M (31)	SLM+ (40)	SLM+ (40)	SLM+ (40)
'73 Beeville	Yield	500	462	390	383
	2.5% SL	1.08	1.13	1.00	1.09
	Mike	5.1	5.4	4.7	4.3
	MPSI	94	82	80	93
	Grade	M (31)	M (31)	SLM+ (40)	M (31)

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Chart No. I (Continued) Page 2

Year & Location		TPSA 1633	Deltapine 16	Lankart 611	Lankart 571
'73 Marburger-San Pat.	Yield	618	626	630	607
	2.5% SL	1.08	1.12	1.02	1.02
	Mike	4.4	5.0	4.4	5.1
	MPSI	87	80	74	79
	Grade	SLM (41)	SLM (41)	SLM (41)	SLM (41)
'73 Teltschik-San Pat.	Yield	560	608	623	531
	2.5% SL	.98	1.05	.98	.91
	Mike	4.8	5.0	4.3	5.2
	MPSI	83	82	72	80
	Grade	SLM (41)	SLM (41)	SLM (41)	SLM (41)
Average-8 Tests	Yield	499	528	504	472
**	2.5% SL	1.04	1.07	.99	1.01
**	Mike	4.9	5.1	4.7	5.1
**	MPSI	89	82	78	83
***	Grade	33	37	39	37

* 1.0 = Storm Resistant 3.0 = Open Boll

** 1.00 - 1.06 = Medium Staple
3.5 - 4.9 = Premium (No Discount) Range
70 - 85 = Medium Strength (MPSI)

*** 31 = Middling
41 = Strict Low Middling

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Chart No. II. Five test comparisons made during 1972 and 1973 production seasons. Comparisons made were between TPSA 1633 and TPSA 110 for Yield, Length (2.5%SL) Micronaire, Strength (MPSI) and Grade. Data compiled under Project 668 - TAES & USDA.

Year & Location		TPSA 1633	TPSA 110
'72 Hoelscher-Nueces Co.	Yield	618	579
	2.5% SL	1.01	1.03
	Mike	5.3	5.3
	MPSI	87	85
	Grade	M (31)	SLM+ (40)
'72 Marburger-San Pat.	Yield	576	637
	2.5% SL	1.11	1.02
	Mike	4.4	5.1
	MPSI	89	90
	Grade	M (31)	SLM+ (40)
'72 Corpus Christi	Yield	264	272
	2.5% SL	1.04	1.03
	Mike	5.3	4.9
	MPSI	88	87
	Grade	M (31)	SLM+ (40)
'72 A & M Plantation	Yield	1253	1235
	2.5% SL	1.13	1.13
	Mike	4.6	4.5
	MPSI	85	85
	Grade	M (31)	SLM (41)
'73 Nueces Co.	Yield	444	412
	2.5% SL	1.05	1.04
	Mike	4.5	4.8
	MPSI	84	90
	Grade	M (31)	SLM+ (40)
Average - Five Tests	Yield	631	627
	* 2.5% SL	1.07	1.05
	* Mike	4.8	4.9
	* MPSI	87	87
	** Grade	(31)	(40)

* 1.00 - 1.06 = Medium Staple
3.5 - 4.9 = Premium (No Discount) Range
70 - 85 = Medium Strength

** 31 = Middling
41 = Strict Low Middling